Statement of Basis

Title V Air Quality Operating Permit Revision

The Department of Veterans Affairs

Hot Springs, South Dakota

South Dakota Department of Environment and Natural Resources

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1.0 OPERATIONAL DESCRIPTION

1.1 Background

On January 25, 2010, the South Dakota Department of Environment and Natural Resources (DENR) issued a Title V air quality permit to the Department of Veterans Affairs for the operation of four boilers at the Hot Springs Medical Center in Hot Springs, South Dakota.

On November 17, 2011, DENR issued an air quality construction permit to the Department of Veterans Affairs. The construction permit allowed the boiler replacement of Unit #2 with Unit #6: 1974 Nebraska boiler, water tube model, fired with distillate oil to a 2011 Cleaver Brooks CEW-101-500-200ST. Permit condition 2.2 of the construction permit requires the Department of Veterans Affairs to submit an application to revise its existing Title V air quality permit to include the boiler replacement. On June 22, 2012, the DENR received the application to revise the Title V air quality permit.

1.2 Existing Operations

Table 1-1 lists the equipment currently operated by the Department of Veterans Affairs as found under the existing Title V air quality permit issued January 25, 2010.

Table 1-1 – Description of Permitted Units, Operations, and Processes

DENR ID	Unit Description	Designed Maximum Operating Rate	Control Device
Unit #2	Boiler #2 - 1974 Nebraska boiler, water tube model, fired with distillate oil.	20.4 million Btus per hour heat input	Not Applicable
Unit #3	Boiler #3 - 1974 Nebraska boiler, water tube model, fired with distillate oil.	20.4 million Btus per hour heat input	Not Applicable
Unit #4	Boiler #4 - 2004 Hurst boiler fired with distillate oil.	7.5 million Btus per hour heat input	Not Applicable
Unit #6	Boiler #1 – 2011 Cleaver Brooks boiler, model CEW-101-500-200ST, fired on distillate oil	20.4 million Btus per hour heat input	Not Applicable

1.3 Proposed Revision

The Department of Veterans Affairs submitted the following revisions that will be considered during this review:

1. Remove Unit #2 (1974 Nebraska boiler rated at 20.4 million Btus per hour heat input) and associated conditions; and
2. Include the operations of Unit #6 (2011 Cleaver Brooks boiler rated at 20.4 million Btus per hour heat input) and associated conditions from the 2011 construction permit.

2.0 New Source Performance Standards (NSPS)

DENR reviewed the new source performance standards and determined the following may be applicable to the proposed boiler:

2.1 Standards Applicable to Boilers

There are three New Source Performance Standards for fossil fuel-fired steam boilers. The three standards are applicable to the following steam boilers:

1. 40 CFR Part 60, Subpart D: applicable to a steam generator with a maximum operating rate of 250 million Btus per hour or more and commenced construction after August 17, 1971;
2. 40 CFR Part 60, Subpart Db: applicable to a steam generator with a maximum operating rate of 100 million Btus per hour or more and commenced construction after June 19, 1984; and
3. 40 CFR Part 60, Subpart Dc: applicable to a steam generator with a minimum design heat input capacity equal to or greater than 10 million Btus per hour but less than or equal to 100 million Btus per hour and commenced construction after June 9, 1989.

Unit #6 is subject to this NSPS for boilers because it was built after 1989, and is rated at 20.4 MMBtus per hour. The subpart limits SO2 emissions from Unit #6 to 0.50 pounds per million Btus of heat input.

The applicable requirements will be the same as those for Unit #5 which are in Chapter 9.0 of the current Title V permit and includes initial notifications of startup and construction, restricts fuel burned to distillate oil, restricts sulfur content of fuel, requires recording the fuel use, monitoring its sulfur content, and semiannual reporting requirements.

3.0 New Source Review

ARSD 74:36:10:01 notes that new source review regulations apply to areas of the state which are designated as nonattainment pursuant to the Clean Air Act for any pollutant regulated under the Clean Air Act. The Department of Veterans Affairs operates in Hot Springs, South Dakota, which is in attainment for all the pollutants regulated under the Clean Air Act. Therefore, the Department of Veterans Affairs is not subject to new source review.

4.0 Prevention of Significant Deterioration (PSD)

A prevention of significant deterioration (PSD) review applies to new major stationary sources and major modifications to existing major stationary sources in areas designated as attainment under Section 107 of the Clean Air Act for any regulated air pollutant. The following is a list of regulated air pollutants under the PSD program:

1. Total suspended particulate (PM);
2. Particulate with a diameter less than or equal to 10 microns (PM10);
3. Particulate with a diameter less than or equal to 2.5 microns (PM2.5);
4. Sulfur dioxide (SO_2);
5. Nitrogen oxides (NOx);
6. Carbon monoxide (CO);
7. Ozone – measured as volatile organic compounds (VOCs);
8. Lead;
9. Fluorides
10. Sulfuric acid mist;
11. Hydrogen sulfide;
12. Reduced sulfur compounds;
13. Total reduced sulfur; and
14. Greenhouse gases (carbon dioxide, methane, nitrous oxide, etc.).

If the source is considered one of the 28 named PSD source categories listed in Section 169 of the federal Clean Air Act, the major source threshold is 100 tons per year of any regulated air pollutant, except for greenhouse gases. The major source threshold for all other sources is 250 tons per year of any regulated air pollutant, except for greenhouse gases.

According to the Clean Air Act, once a pollutant is regulated under any part of the Act, (as was the case with greenhouse gas emissions after the motor vehicle regulations were finalized in March 2010) major new sources or major modifications are subject to the PSD program and Title V air quality operating permit program. Under the Clean Air Act, PSD and Title V air quality operating permits are required for all sources that emit a regulated air pollutant above 100 or 250 tons per year, depending on the source. This threshold, if applied to greenhouse gases, would greatly increase the number of facilities requiring a PSD review or Title V air quality operating permit. Based on administrative necessity, EPA increased these thresholds through the "Tailoring Rule."

On May 13, 2010, EPA issued the final version of the "Tailoring Rule" for greenhouse gas emissions. The major source threshold for greenhouse gases is listed below:

1. New PSD source because of a criteria air pollutant, the major source threshold for greenhouse gases is 75,000 tons per year of carbon dioxide equivalent or more;
2. New PSD source if greenhouse gas emissions are 100,000 tons per year of carbon dioxide equivalent or more;
3. For an existing PSD source because of a criteria air pollutant, a major modification for greenhouse gases is an increase of 75,000 tons per year of carbon dioxide equivalent or more;
4. For an existing non-PSD source that has the potential to emit 100,000 tons per year of carbon dioxide equivalent emissions or more, a major modification for greenhouse gases is an increase of 75,000 tons per year of carbon dioxide equivalent or more; and
5. In addition to subsection (2) and (4), a specific greenhouse gas, without calculating the carbon dioxide equivalent, also needs to emit greater than 100 or 250 tons per year, whichever is applicable, to be regulated.

4.1 POTENTIAL EMISSIONS

4.1 Emission Factors

DENR uses stack test results to determine air emissions whenever stack test data is available from the source or a similar source. When stack test results are not available, DENR relies on manufacturing data, material balance, EPA's Compilation of Air Pollutant Emission Factors (AP-42, Fifth Edition, Volume 1) document, the applicant's application, or other methods to determine potential air emissions.

Boilers are classified according to their gross heat input. A small industrial boiler is classified as having a heat input capacity less than 100 million Btus per hour. The new unit has a capacity of 20.4 million Btus per hour; therefore, it fits under the industrial boiler classification.

The emission factors for the boilers burning distillate oil are derived from AP-42, Table 1.3.1, 5/10 and Table 1.3.2, 5/10 for boilers with input capacities less than 100 million Btus per hour. The State and federal emission limits for these units are in units of pounds pollutant per million Btu of heat input so DENR converted the AP-42 emission factors from units of pounds pollutant per 1,000 gallons of fuel burned to pounds pollutant per million Btu of heat input based on a distillate oil heat capacity of 140 million Btus per thousand gallons. The AP-42 values and converted values are shown in Table 4-1.

Table 4-1 – Boiler Emission Factors

Pollutant	TSP[b]	PM10[b]	SO2[a]	NOx	CO	VOC	HAP
Emission factor [lbs/1000 gallons]	2	1	7	20	5	0.2	0.048
Emission factor [lbs/million Btu]	0.014	0.007	0.050	0.143	0.036	0.001	0.0003

[a] – Based on a distillate oil sulfur content of 0.05 percent by weight
[b] – Filterable

This chapter of AP-42 was updated in May 2010 and contains emission factors for CO2 and condensable particulates as shown below in Table 4-2.

Table 4-2 – Boiler Emission Factors Continued

Pollutant	Condensible Particulates	Total PM10[a]	CO2
Emission factor [lbs/1000 gallons]	1.3	2.3	22,300
Emission factor [lbs/million Btu]	0.01	0.02	159

[a] – Condensables are smaller than PM10 or smaller so total PM10 is filterable plus condensable.

4.2 Potential Boiler Emission Estimates

Potential emissions are based on operating at the maximum heat input capacity, 24 hours per day, 7 days per week. DENR used Equation 4-1, the boiler's listed heat input capacity, and the emission factors in Table 4-1 to determine the greatest potential emissions from the boiler. The results are displayed in Tables 4-3 and 4-4.

Equation 4-1 – Calculating Potential Boiler Emissions

$$Potential\left[\frac{tons}{year}\right] = 8760\left[\frac{hours}{year}\right] \times input\ capacity\left[\frac{MMBtus}{hour}\right] \times emission\ factor\left[\frac{pounds}{MMBtus}\right] \div 2{,}000\left[\frac{pounds}{ton}\right]$$

Table 4-3 – Potential Emissions – Boilers (tons per year)

Unit#	TSP[a]	PM10[a]	SO_2	NOx	CO	VOC	HAPs
6	1.3	0.6	4.5	12.8	3.2	0.1	0.0

[a] – Filterable only

Table 4-4 – Potential Emissions – Boiler (tons per year) Continued

Unit#	Condensable Particulates	Total PM10[a]	CO2
6	0.83	1.47	14207

[a] – Filterable and condensable particulate matter

4.3 Summary of Facility Emission Estimates

Table 4-5 summarizes the potential emissions from the currently permitted units and the new boiler. Unit #2 has been removed from service. Therefore, Unit #2's potential emissions are not included in the Table. The potential emissions from Units #3 through #5 were taken from the 2010 statement of basis, except for carbon dioxide. The potential carbon dioxide emissions for Units #3 through #5 were calculated by using equation 4-1, the maximum capacity in Table 1-1 and the emission factors in Table 4-2.

Table 4-5 –Facility Potential Emissions

Unit	PM10 (tons/year)	SO2 (tons/year)	NOx (tons/year)	CO (tons/year)	VOCs (tons/year)	CO2 (tons/year)
#3	1.4	5.0	14.1	3.5	0.1	14,207
#4	0.5	1.7	4.7	1.2	0.1	5,223
#5	1.3	4.5	12.8	3.2	0.1	14,207
#6	1.5	4.5	12.8	3.2	0.1	14,207
Total	5	16	44	11	0	47,844

4.2 PSD Applicability

The Department of Veterans Affairs is not one of the 28 named facilities; therefore its criteria pollutant threshold is 250 tons per year. Based on the emission estimates noted in Table 4-5, the Department of Veterans Affairs is considered a minor source for the criteria pollutants and not applicable to the PSD program. In regards to greenhouse gas emissions, the Department of Veterans Affairs is considered an existing non-PSD source. The addition of the new boiler by itself does not have the potential emissions greater than 100,000 tons per year and is not applicable to the PSD program. With the addition of the new boiler, the Department of Veterans Affairs will still be considered an existing non-PSD source.

5.0 National Emission Standards for Hazardous Air Pollutants (NESHAP)

Presently, there are no finalized or promulgated National Emissions Standards for Hazardous Air Pollutants standards applicable to this type of operation.

6.0 Maximum Achievable Control Technology Standards (MACT)

6.1 Potential HAP Emissions

The federal Maximum Achievable Control Technology Standards are applicable to both major and area sources of hazardous air pollutants. A major source of hazardous air pollutants is defined as having the potential to emit 10 tons or more per year of a single hazardous air pollutant or 25 tons per year or more of a combination of hazardous air pollutants. An area source is a source that is not a major source of hazardous air pollutants.

DENR uses stack test results to determine air emissions whenever stack test data is available from the source or a similar source. When stack test results are not available, DENR relies on manufacturing data, material balance, EPA's Compilation of Air Pollutant Emission Factors (AP-42, Fifth Edition, Volume 1) document, the applicant's application, or other methods to determine potential air emissions.

Table 6-1 summarizes the potential emissions from the currently permitted units and the new boiler. Unit #2 has been removed from service. Therefore, Unit #2's potential emissions are not included in the Table. The potential emissions from Units #3 through #5 were taken from the 2010 statement of basis.

Table 6-1 –Facility Potential Emissions

Unit	HAPs (tons/year)
#3	0.0
#4	0.0
#5	0.0
#6	0.0
Total	0

The Department of Veterans Affairs is considered an area source of hazardous air pollutants.

DENR reviewed the Maximum Achievable Control Technology standards and determined that the following may be applicable.

6.2 Area Source for Industrial, Commercial and Institutional Boilers

On March 21, 2011, EPA finalized the MACT standard under 40 CFR Part 63, Subpart JJJJJJ. This rule applies to all new or existing industrial, commercial, and institutional boilers located at an area source of hazardous air pollutants. An existing boiler is defined as a boiler where construction or reconstruction occurred prior to June 4, 2010.

The new boiler is applicable to this subpart and a 0.03 pound per million Btu particulate matter emission limit.

7.0 State Requirements

Permit condition 2.2 of the construction permit required the Department of Veterans Affairs to submit an application to revise its existing Title V air quality permit to include the boiler replacement. The revisions to the permit are considered a permit modification.

7.1 State Emission Limits

In accordance with 74:36:12, fuel burning units are subject to a visible emission limit of 20 percent opacity. Particulate matter and sulfur dioxide emission limits for fuel burning units are derived from ARSD 74:36:06:02. Equation 7-1 was derived from ARSD 74:36:06:02(1)(b) and is used to determine the total suspended particulate matter emission limits for Unit #6.

Equation 7-1 – Boiler total suspended particulate matter emission limits

$$E_{TSP} = 0.811 \times H^{-0.131}$$

where:

- E = allowable total suspended particulate matter emission rate in pounds per million Btus heat input; and
- H = heat input in million Btus per hour.

The resulting particulate limit is 0.55 pounds per million Btu, however Unit #6 is subject to a maximum achievable control technology standard of 0.03 pounds particulate per million Btu of heat input which is more stringent than the state limit; therefore, the state limit will not be placed in the permit.

In accordance with ARSD 74:36:06:02(2), the sulfur dioxide emission limit for fuel burning units is 3.0 pounds per million Btus heat input, however Unit #6 is subject to a new source performance standard of 0.50 pounds sulfur dioxide per million Btu of heat input which is more stringent than the state limit; therefore, the state limit will not be placed in the permit.

7.2 Performance Tests

Permit condition 8.5 of the 2011 construction permit required the Department of Veterans Affairs to conduce a particulate matter performance test on the new boiler. In March 2012, the performance test was completed. The test results noted a particulate matter emission rate of 0.0007 pounds per million Btus, which complies with the 40 CFR Part 63, Subpart JJJJJJ particulate matter limit of 0.03 pounds per million Btus.

The permit will contain language that allows DENR to require a stack performance test during the term of the permit if an investigation of the facility warrants it.

7.3 Compliance Assurance Monitoring

Compliance assurance monitoring is applicable to permit applications received on or after April 20, 1998, from major sources applying for a Title V air quality permit. The Department of Veterans Affairs' application was received in June 2012. Therefore, compliance assurance monitoring is applicable to any unit that meets the following criteria:

1. The unit is subject to an emission limit or standard for the applicable regulated air pollutant;
2. The unit uses a control device to achieve compliance with any such emission limit or standard; and
3. The unit has potential uncontrolled emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

The Department of Veterans Affairs is required to obtain a Title V air quality permit because it is applicable to a federal standard (New Source Performance Standard) and not because it is a major source of emissions. In addition, the new boiler does not meet the requirements of items #2 or #3. Therefore, compliance assurance monitoring is not required.

7.4 Periodic Monitoring

Periodic monitoring is required for each emission unit that is subject to an applicable requirement at a source subject to the Title V air quality operating permit program. The permitted units at this facility are required to meet opacity limits applicable to the New Source

Performance Standards and Maximum Achievable Control Technology Standards. Periodic monitoring will be based on the following:

1. Periodic monitoring for opacity will be based on periodic visible emission readings or evaluations as described in Chapter 8 of the current Title V permit; and
2. The applicable limits (e.g. particulate matter and sulfur dioxide) in the New Source Performance Standards and Maximum Achievable Control Technology Standards will be based on the requirements in the applicable standard.

8.0 RECOMMENDATION

The Department of Veterans Affairs in Hot Springs is required to operate within the requirements stipulated in the following regulations:

- ARSD 74:36:05 - Operating Permits for Part 70 Sources;
- ARSD 74:36:06 - Regulated Air Pollutant Emissions;
- ARSD 74:36:07 - New Source Performance Standards;
- ARSD 74:36:08 - National Emission Standards for Hazardous Air Pollutants;
- ARSD 74:36:11 - Stack Performance Testing; and
- ARSD 74:36:12 - Control of Visible Emissions.

Based on information received in the permit application, DENR recommends approval of the permit modification. The revisions to the permit may be seen in the draft permit conditions included as Appendix A. Any questions on this review should be directed to Ashley Brakke, Engineer I.

APPENDIX A
DRAFT PERMIT MODIFICATION

The following changes to the existing permit represent changes that meet the definition of a permit modification. Additions to the existing permit are represented in blue and underlined and deletions are represented in red with overstrikes. In the case where permit conditions are deleted or added between permit conditions, the permit conditions will be renumbered appropriately when the permit is issued.

1.0 STANDARD CONDITIONS

1.1 Operation of source.

In accordance with Administrative Rules of South Dakota (ARSD) 74:36:05:16.01(8), the owner or operator shall operate the units, controls, and processes as described in Table 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application submitted and dated July 19, 2007, July 6, 2009, and July 24, 2009,, unless modified by the conditions of this permit. Except as otherwise provided herein, the control equipment shall be operated in a manner that achieves compliance with the conditions of this permit at all times. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted.

Table 1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Maximum Operating Rate	Control Device
Unit #3	Boiler #3 - 1974 Nebraska boiler, water tube model, fired with distillate oil.	20.4 million Btus per hour heat input	Not Applicable
Unit #4	Boiler #4 - 2004 Hurst boiler fired with distillate oil.	7.5 million Btus per hour heat input	Not Applicable
Unit #5	Boiler #1 – 2008 Cleaver Brooks boiler, model CEW-101-500-150, fired on distillate oil	20.4 million Btus per hour heat input	Not Applicable
Unit #6	Boiler #2 -- 2011 Cleaver Brooks CEW-101-500-200ST 500 hp fired on distillate oil with boiler efficiency 82%	20.4 million Btus per hour heat input	Not Applicable

6.0 CONTROL OF REGULATED AIR POLLUTANTS

6.3 Total suspended particulate matter limits.

In accordance with ARSD 74:36:06:02(1) and/or ARSD 74:36:06:03(1), the owner or operator shall not allow the emission of total suspended particulate matter in excess of the emission limit specified in Table 6-1 for the appropriate permitted unit, operation, and process.

Table 6-1 – Total Suspended Particulate Matter Emission Limit

Unit	Description	Emission Limit
Unit #3	1974 Nebraska boiler	0.5 pounds per million Btus
Unit #4	2004 Hurst boiler	0.6 pounds per million Btus
Unit #5	2008 Cleaver Brooks boiler	0.5 pounds per million Btus

6.4 Sulfur dioxide limits.

In accordance with ARSD 74:36:06:02(2) and/or ARSD 74:36:06:03(2), the owner or operator shall not allow the emission of sulfur dioxide in excess of the emission limit specified in Table 6-2 for the appropriate permitted unit, operations, and process.

Table 6-2 – Sulfur Dioxide Emission Limit

Unit	Description	Emission Limit
Unit #3	1974 Nebraska boiler	3.0 pounds per million Btu heat input
Unit #4	2004 Hurst boiler	3.0 pounds per million Btu heat input

Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.

9.0 New Source Performance Standard Subpart Dc

9.1 Date of construction and startup notification.

In accordance with ARSD 74:36:07:01 and ARSD 74:36:07:05, as referenced to 40 CFR § 60.7(a) and § 60.48c(a), the owner or operator shall submit notification of the date of construction and initial startup of Units #5 and #6. The notification shall include:

1. Name of facility, permit number, and reference to this permit condition
2. Identify the submittal as a construction or initial startup notification;
3. Identify the date of construction and/or date of initial startup, whichever notification is applicable; and
4. The design heat input capacity of Units #5 and #6 and identification of fuels to be combusted in the unit.

The notification of the date of construction or reconstruction must be postmarked no later than 30 days after construction or reconstruction commences. The initial startup notification must be postmarked within 15 days after the date of actual startup.

9.2 Changing boiler fuels.

In accordance with ARSD 74:36:07:05, as referenced to 40 CFR § 60.40c, Units #5 and #6 shall be fueled distillate oil only. If the boilers are fueled with other fuels such as propane, coal, other oil, or wood, additional standards and requirements in 40 CFR Part 60, Subpart Dc may apply. The owner or operator shall apply for and obtain approval from the Secretary before other fuels can be used as a fuel in Unit #5.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2. Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6. Specifications for fuel oils are defined in the American Society for Testing and Materials in ASTM D396-78, "Standards Specifications for Fuel Oils".

9.3 Standard for sulfur dioxide.

In accordance with ARSD 74:36:07:05, as referenced to 40 CFR, § 60.42c(d), (h)(1), and (i) the owner or operator shall not combust oil that contains greater than 0.5 weight percent sulfur in Units #5 and #6. Compliance with the sulfur limit shall be determined based on a certification from the fuel supplier. The fuel certification must include the information in permit conditions 9.4.

The fuel oil sulfur limit shall apply at all times, including periods of start-up, shutdown, and malfunctions.

9.5 Records of fuel used.

In accordance with ARSD 74:36:07:05, as referenced to 40 CFR, § 60.48c(g)(2), the owner or operator shall record and maintain records of the amount of distillate oil combusted in Units #5 and #6 during each calendar month.

The records required under this Chapter must be maintained for a minimum of two years from the date of such record.

10.0 MACT SUBPART JJJJJJ FOR BOILERS

10.1 Particulate matter emissions limit

In accordance with 40 CFR § 63.11201(a) and (d), the owner or operator shall not allow emissions of particulate matter in excess of the emission limit specified in Table 10-1 for the identified boiler. The emission limit applies at all times except during periods of startup and shutdown.

Table 10-1 –Particulate Matter Emission Limit

Unit	Description	Emission Limit
#6	Boiler	0.03 pounds per million Btu heat input

10.2 Work practice standard

In accordance with 40 CFR § 63.11201(b), the owner or operator shall conduct the following work practice standards for Unit #6:

1. The owner or operator shall minimize startup and shutdown periods following the manufacturer's recommended procedures for startup and shutdown of Unit #6. If the manufacturer recommended procedures are not available, the owner or operator shall follow the recommend procedures of a similar designed boiler for which manufacturer's recommended procedures are available; and

2. The owner or operator shall conduct a biennial tune-up of Unit #6 as specified in permit condition 10.11.

10.3 Operational limit

In accordance with 40 CFR §§ 63.11201(c) and (d) and 63.11212(c), the owner or operator shall at all times maintain the operating load of the Unit #6 to less than or equal to 110 percent of the operating load recorded during the most recent performance test.

10.4 Site-Specific Monitoring plan

In accordance with 40 CFR §§ 63.11205(c) and 63.11224(c), the owner or operator shall develop and maintain a site-specific monitoring plan to demonstrate Unit #6 will not exceed 110 percent of the operating load recorded during the most recent performance test. The site-specific monitoring plan shall include the following requirements:

1. Performance and equipment specifications for the device measuring the operating load and the data collection system;
2. Performance evaluation procedures and acceptance criteria (e.g. calibrations) for the device measuring the operating load;
3. Ongoing operation and maintenance procedures in accordance with the following requirements:
   a. Maintain the necessary parts for routine repairs of the device measuring the operating load and data collection system; and
   b. Install, operate, and verify data as specified by the manufacturer either prior to or in conjunction with the initial performance test required in permit condition 10.5. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendation for installation, operation, and calibration of the system;
4. Ongoing data quality assurance procedures in accordance with the following:
   a. Initial and any subsequent calibration of the device measuring the operating load;
   b. Preventative maintenance of the device measuring the operating load, include spare parts inventory;
   c. Data recording and reporting;
   d. Accuracy audit procedures, including analysis methods; and
   e. Program of corrective action if the device measuring the operating load or data collection system malfunctions;
5. Ongoing recordkeeping and reporting procedures in accordance with the following:
   a. All measurements from the device measuring the operating load;
   b. Date and time identifying each period during which the device measuring the operating load was inoperative;
   c. The specific identification (e.g., the date and time of commencement and completion) of each time period where the operating load exceeds 110 percent of the operating load recorded during the most recent performance test that occurs during startups, shutdowns, and malfunctions of Unit #6;
   d. The specific identification (e.g., the date and time of commencement and completion) of each time period where the operating load exceeds 110 percent of the operating load

recorded during the most recent performance test that occurs during periods other than startups, shutdowns, and malfunctions;

e. The nature of the repairs or adjustment of the device measuring the operating load or data collection system; and

f. The total operating time of Unit #6 during the reporting period.

6. The owner or operator shall conduct a performance evaluation of the device measuring the operating load in accordance with the site-specific monitoring plan; and
7. The owner or operator shall operate and maintain the device measuring the operating load in continuous operation in accordance with the site-specific monitoring plan.

The owner or operator shall submit a copy of the site-specific monitoring plan to the Secretary, upon request, for approval. The site-specific monitoring plan, if requested, shall be submitted at least 60 days prior to the initial performance evaluation of the device measuring the operating load.

10.5 Initial compliance demonstration for emission and operational limit

In accordance with 40 CFR §§ 63.11210(a) and (d), 63.11211(a), and 63.11212(c), the owner or operator shall demonstrate initial compliance with permit condition 10.1 by conducting an initial particulate matter performance test in accordance with permit condition 10.6 within 180 days after the initial startup of Unit #6, establish the operational limit in permit condition 10.2 according to permit condition 10.10, and conduct a performance evaluation of the device measuring the operating load according to permit condition 10.4.

10.6 Performance test procedures

In accordance with 40 CFR § 63.11212, the owner or operator shall conduct particulate matter performance tests in accordance with the following procedures:

1. Select a sampling port location and the number of traverse points according to 40 CFR Part 60, Appendix A, Method 1;
2. Determine velocity and volumetric flow rate of the stack gas according to 40 CFR Part 60, Appendix A, Methods 2, 2F, or 2G
3. Determine oxygen and carbon dioxide concentrations of the stack gas according to 40 CFR Part 60, Appendix A, Methods 3A or 3B or ASTM D6522-00 (reapproved 2005) or ANSI/ASME PTC 19.10-1981;
4. Measure the moisture content of the stack gas according to 40 CFR Part 60, Appendix A, Method 4;
5. Measure the particulate matter emission concentrations according to 40 CFR Part 60, Appendix A, Methods 5 or17 with a minimum of 1 dry standard cubic meters of sample volume per run; and
6. Convert the particulate matter emissions concentration to a pounds per million Btus emission rate using the F-Factor methodology and equations in section 12.2 and 12.3 of 40 CFR Part 60, Appendix A, Method 19.

10.7 Initial compliance with work practice standard

In accordance with 40 CFR § 63.11214(b) and (d), the owner or operator shall demonstrate initial compliance with permit condition 10.2 by the following:

1. Conduct a performance tune-up within 180 days after the initial startup of Unit #6 according to permit condition 10.11 and submit a signed statement in the Notification of Compliance Status report required in permit condition 10.13 that indicates the owner or operator conducted a tune-up of Unit #6; and
2. Submit a signed statement in the Notification of Compliance Status report required in permit condition 10.13 that indicates the owner or operator minimized Unit #6's startup and shutdown periods by conducting startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if the manufacturer's recommended procedures are not available.

10.8 Periodic performance tests

In accordance with 40 CFR § 63.11220(a), the owner or operator shall conduct a subsequent particulate matter performance test on a triennial basis. The performance test shall be conducted within 37 months from the date the initial or periodic performance was previously completed to determine compliance with the particulate matter emission limit in permit condition 10.1 and re-establish the operational limit in permit condition 10.3. The particulate matter test shall be conducted in accordance with permit condition 10.6.

10.9 Demonstration of continuous compliance with monitoring data

In accordance with 40 CFR §§ 63.11221 and 63.11224(d), the owner or operator shall monitor and collect data according to the following:

1. The owner or operator shall operate the device measuring the operating load and the data collection system at all times Unit #6 is operating except for periods of monitoring system malfunctions, repairs associated with a monitoring system malfunction, and required monitoring system quality assurance or quality control activities. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures caused in part by poor maintenance or careless operation are not malfunctions. The owner or operator is required to return the monitoring system to operation as expeditiously as practicable;
2. The owner or operator may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities; and
3. Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions and required monitoring system quality assurance or quality control activities, failure to collect required data is a deviation of the monitoring requirements.

10.10 Demonstration of continuous compliance with emission limit

In accordance with 40 CFR § 63.11222(a)(1) and (b), following the date on which the initial compliance demonstration is completed or is required to be completed in accordance with permit condition 10.5, whichever date comes first, the owner or operator shall continuously monitor the operating parameters in permit condition 10.3. Operation above the established maximum operating limit constitutes a deviation from the operating limit in permit condition 10.3, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during

performance tests. The owner or operator must report each instance in which the owner or operator did not meet the emission limit in permit condition 10.1 or the operating limit in permit condition 10.3. These instances are deviations from the emission limit in permit condition 10.1 and must be reported in accordance with permit condition 10.14.

10.11 Boiler tune-up

In accordance with 40 CFR § 63.11223(a) and (b), the owner or operator shall conduct a tune-up of Unit #6 on a biennial basis. The biennial tune-up shall be conducted within 25 months from the date the previously conducted tune-up was completed. The tune-up shall meet the following requirements:

1. As applicable, inspect the burner, and clean or replace any components of the burner as necessary. The owner or operator may delay the burner inspection until the next scheduled shutdown, however, the burner must be inspected at least once every 36 months;
2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly;
4. Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available;
5. Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made);
6. Maintain onsite and submit, if requested by the Secretary, a report containing the following information:
   a. The concentrations of carbon monoxide in parts per million, by volume, and oxygen in volume percent, measured before and after the tune-up of Unit #6;
   b. A description of any corrective actions taken as a part of the tune-up of Unit #6; and
   c. The type and amount of fuel used over the 12 months prior to the biennial tune-up of Unit #6; and
7. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.

10.12 Initial startup of boiler

In accordance with 40 CFR §§ 63.11225(a)(1), the owner or operator shall submit a notification to the Secretary within 15 days after the initial startup of Unit #6. The initial startup of Unit #6 is the date fuel is first fired in Unit #6.

10.13 Notice of Compliance Status

In accordance with 40 CFR §§ 63.11225(a)(4), the owner or operator shall submit a Notification of Compliance Status to the Secretary within 60 days after the initial performance test in permit condition 10.5 is completed. The Notification of Compliance Status shall contain the following:

1. The methods used to determine compliance;

2. The quantity of particulate matter emitted during the performance test, in pounds per million Btus heat input;
3. The operating load during the performance test;
4. A description of the monitoring device that will be used to continuously measure the operating load and the data collection system;
5. A statement by the owner or operator as to whether the source has complied with the relevant standard or other requirements; and
6. A statement that the initial tune-up of Unit #6 was conducted in accordance with permit condition 10.7.

The Notice of Compliance Status shall be signed by the responsible official.

10.14 Annual compliance certification report

In accordance with 40 CFR § 63.11225(b), the owner or operator shall prepare an annual compliance certification report by March 1 of each year for the previous calendar year and submit it to the Secretary upon request. The report shall contain the following information:

1. Facility name and address;
2. Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of Chapter 10.0;
3. If Unit #6 experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken; and
4. The total fuel use by Unit #6, for each calendar month within the reporting period, in gallons.

The owner or operator is required to submit the report by March 15 if Unit #6 experiences any deviations during the reporting period.

10.15 Boiler recordkeeping requirements

In accordance with 40 CFR § 63.11225(c), the owner or operator shall maintain the following records:

1. Identify the date of each boiler tune-up, the procedures followed for the tune-up, and the manufacturer's specifications to which Unit #6 was tuned;
2. Monthly records of fuel use by boiler(s), in gallons;
3. Occurrence and duration of each malfunction of Unit #6 or the device used to monitoring the operating load of Unit #6;
4. Record of actions taken during periods of malfunctions to minimize emissions, including corrective actions to restore Unit #6 and or monitoring equipment to normal or usual operation; and
5. All records gathered in accordance with permit condition 10.9 and 10.10.

10.16 Reporting electronically to EPA

In accordance with 40 CFR § 63.11225(e), as of January 1, 2012, the owner or operator shall submit the results of each performance test electronically to EPA's Central Data Exchange by using the Electronic Reporting Tool (e.g., http://www/epa.gove/ttn/chief/ert/erttool.html/) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement. The owner or operator is required to submit the data electronically within 60 days after the date of completing each performance test.

10.17 Asserting an affirmative defense

In accordance with 40 CFR § 63.11226(a), the owner or operator may assert an affirmative defense to a claim of civil penalties for an exceedance of the emission limit in permit condition 10.1 that are caused by malfunction. Appropriate penalties may be assessed, however, if the owner or operator fails to meet the burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims of injunctive relief. To establish the affirmative defense in any action to enforce the emission limit in permit condition 10.1, the owner or operator must timely meet the notification requirement in permit condition 10.18 and prove by a preponderance of evidence that:

1. The excess emissions:
   a. Were caused by a sudden, infrequent, and unavoidable failure of process equipment or a process to operate in a normal or usual manner;
   b. Could not have been prevented through careful planning, proper design or better operation and maintenance practices;
   c. Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and
   d. Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
2. Repairs were made as expeditiously as possible when the applicable emission limit in permit condition 10.1 was being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs;
3. The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;
4. If the excess emissions resulted from a bypass of a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
5. All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health;
6. All emissions monitoring systems were kept in operation if at all possible, consistent with safety and good air pollution control practices;
7. All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs;
8. At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and
9. A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best

monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

10.18 Notification of exceedance during a malfunction

In accordance with 40 CFR § 63.11226(b), the owner or operator shall notify the Secretary by telephone or facsimile (FAX) transmission if a boiler experiences an exceedance of the emission limit in permit condition 10.1 during a malfunction as soon as possible but no later than two business days after the initial occurrence of the malfunction, if the owner or operator wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Secretary within 45 days of the initial occurrence of the malfunction to demonstrate, with all necessary supporting documentation, that the owner or operator has met the requirements set forth in permit condition 10.17. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Secretary before the expiration of the 45 day period. Until a request for an extension has been approved by the Secretary, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.